

Trick or Treat: Mining GED Ready[®] Score Reports

A Workshop from GED Testing Service

October 30, 2018



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Session Objectives

- Analyze real GED Ready[®] Score Reports
- Discuss the why and how of using score reports (as prescriptions) to drive instruction
- Share ideas and resources

How And When Do YOU Use Score Reports?

7/6/2018 MyGED® : Score Report

GED Ready® - Reasoning Through Language Arts

My Score: 139
TOO CLOSE TO CALL
Test Date: 01/17/2018

How I Can Score Higher

Reading for Meaning

Skill You Can Improve	Publisher Study Recommendations ⓘ
•Analyze how details develop the main idea (Example: causes, reasons)	Select your study material from the dropdown above to get study recommendations
•Analyze how the organization of a paragraph or passage supports the author's ideas	
•Infer the author's purpose when it is or is not stated	
•Understand how the use of words, phrases, or figurative language influences the author's intent	
•Make inferences about plots, sequence of events, characters, settings, and ideas	

<https://app.ged.com/portal/#scoreReport?examResultId=8082147> 1/3

Common Uses

- Look at the score only...to gauge how far from 145 the score is
- Get a feel for what work needs to be done (in terms of skills and content)
- If applicable, compare the GED Ready® and the GED® operational test scores for similarities and differences
- Don't really use the score report—consider the feedback “too generic”

Why Focus on GED Ready[®] Score Reports?

- Highly predictive of operating test performance
- Report format is identical to the operational content area tests
- Half-length
- Potential to identify weaknesses before operational testing—allowing for better outcomes and more test-taker confidence
- Feedback for corrective action

Overview of the Enhanced Score Report

FEATURE	GED [®] TEST	GED READY [®] PRACTICE TEST
My Score	Indicates if a test-taker passed, passed with honors, or scored below passing.	Indicates if a test-taker is likely to pass, too close to call, or not likely to pass the GED [®] test.
How I Can Score Higher	Shows the skills a test-taker needs to work on before trying again. Includes a personalized study plan with pages and chapters to review in popular study materials.	Shows the skills a test-taker needs to work on before taking the GED [®] test. Includes a personalized study plan with pages and chapters to review in popular study materials.
What My Score Means	Explains what skills the student successfully demonstrated on the GED [®] test	Explains what skills the student successfully demonstrated on the GED Ready [®] practice test.
Review My Written Answers	Available for the RLA test subject. Shows the students' scores for their responses and the skills they need to work on to score higher. Not available for Science, Social Studies, or Math subjects.	Displays the test-taker's written responses to extended response items. Educators can use the constructed response scoring tools to give test-takers feedback on their responses.

So...How Can You “Build” a Passer?



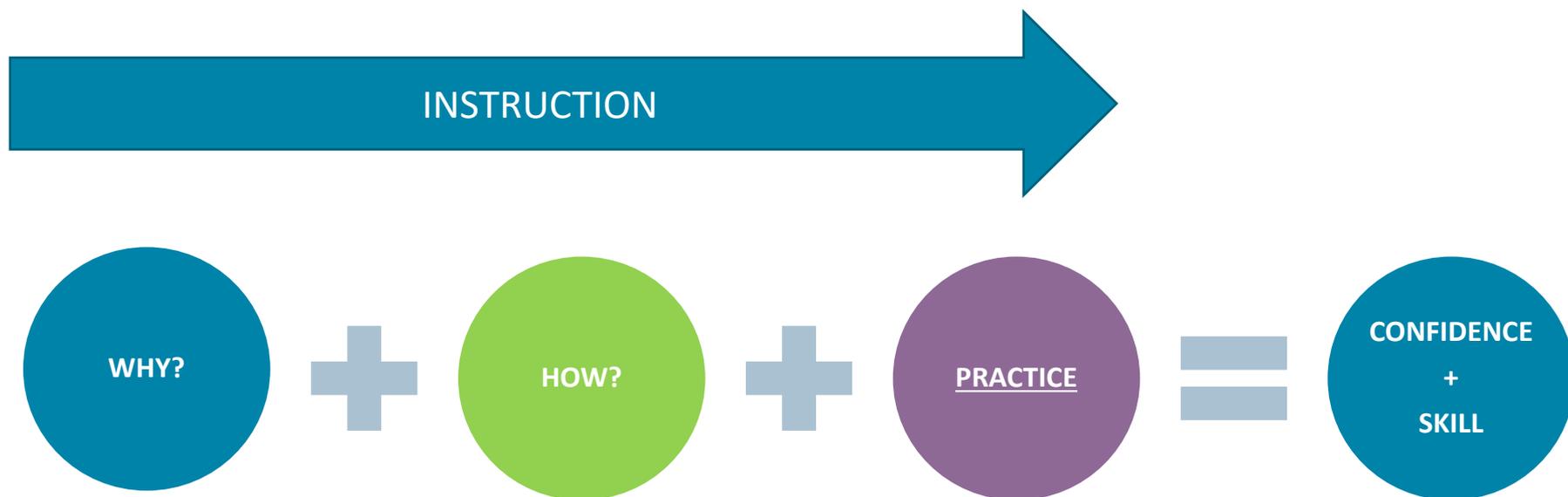
Devin, GED® graduate

Some Advice

- Spend the time to review score reports in some detail to use the feedback about the skills consistently demonstrated
- If you can—compare student results to determine similarities and differences in what skills need development
- Use the score reports to have conversations with students about when to re-test
- Remember to select publisher materials for detailed “prescriptions”

- Encourage students to see beyond their disappointment
- Ensure that YOU model resilience
- Don’t be discouraged—or allow students to be discouraged—by the number of items listed as needing improvement
- Focus on introducing constructive strategies for grouping and developing skills

Building a Passer



Protocol for Action

- Categorize the feedback
- Be concrete
- Make connections

Action Plan

Review

Diagnose

Prescribe

What learning experiences are needed for improvement?

What does the feedback say about student performance?

Before Diving In...

A short reminder about the importance of *reading skills*...

Reading...

- Is fundamental
- Is essential for developing or enhancing higher order thinking skills (e.g. critical thinking, problem solving, and reasoning)
- Is at the heart of all content—without reading skills, content cannot be accessed or learned
- Provides the necessary framework that enables learning

Proficient Readers (and Writers) Can...

- Read complex text
- Identify text structure
- Look for key words and phrases
- Unpack the prompt
- Develop a claim or argument
- Find the evidence that supports that claim or argument
- Analyze and evaluate the evidence
- Explain how the evidence is connected to the claim or argument

This holds true across all content areas

What Instructors Need to Know:

Reasoning Through Language Arts

Overview of RLA Test



- Content - Integrated reading and writing
 - Close reading
 - Clear writing
 - Editing and understanding the use of standard written English in context
- Source texts – 75% nonfiction; 25% fiction
- Passage length – 400-900 words
- Range of text complexity, including texts at the college- and career-ready level
- Technology-enhanced items and extended response

A GED Ready[®] Score Report: Yellow Zone Alert

7/6/2018 MyGED[®] : Score Report

GED Ready[®] - Reasoning Through Language Arts

My Score: 139
TOO CLOSE TO CALL
Test Date: 01/17/2018

How I Can Score Higher

Reading for Meaning

Skill You Can Improve

- Analyze how details develop the main idea (Example: causes, reasons)
- Analyze how the organization of a paragraph or passage supports the author's ideas
- Infer the author's purpose when it is or is not stated
- Understand how the use of words, phrases, or figurative language influences the author's intent
- Make inferences about plots, sequence of events, characters, settings, and ideas

Publisher Study Recommendations ⓘ

Select your study material from the dropdown above to get study recommendations

<https://app.ged.com/portal#/scoreReport?examResultId=8082147>

1/3

Skill You Can Improve**Publisher Study Recommendations**

- Analyze how an author uses rhetorical techniques (Example: imagery, irony, analogies, repetition, qualifying statements)

Identifying and Creating Arguments**Skill You Can Improve****Publisher Study Recommendations ?**

- Understand main ideas and details
- Determine the main idea
- Identify the relationship between the main idea and details
- Identify evidence used to support a claim or conclusion

Additional Skills to Work On

Scoring into the Green Zone on the GED Ready® practice test shows that you are likely to pass the GED® test. In order to progress into the Green Zone, consider doing the following:

Strengthen the skills listed in the Red and Yellow Zones and apply them to texts at a challenging level of complexity, such as Zora Neale Hurston's *Their Eyes Were Watching God*, Martin Luther King Jr.'s *Letter from Birmingham Jail*, and *Euclid's Element*, with a particular focus on improving the following Yellow Zone skills:

- Make generalizations or hypotheses based on evidence in a written source
- Determine the author's point of view or purpose
- Analyze how an author uses rhetorical techniques
- Correct errors with frequently confused words

Develop the following additional skills:

7/6/2018

MyGED® : Score Report

- Make a judgment about whether the evidence offered to support a claim is relevant and sufficient
- Eliminate run-on sentences, fused sentences, or sentence fragments

Please note that your projected score for Reasoning Through Language Arts of the GED® test is valid for 60 days from the date you took Reasoning Through Language Arts of GED Ready®. In addition, it assumes you took Reasoning Through Language Arts of GED Ready® in one sitting, under timed conditions, with no breaks. The projected score is only an indication of your preparedness for the actual GED® test and does not guarantee that you will actually obtain the projected score on the GED® test. See My Scores, "Review My Written Answers" page for detailed descriptions of typical written answers to Extended Response items that would meet the passing standard. Although the study recommendations listed on the "How I Can Score Higher" page may aid you in preparing for the GED® test, following these recommendations alone does not guarantee a positive result on the actual GED® test.

The GED Ready[®] RLA Score: 139

Areas for Improvement (Review)

Close
Reading

- **Reading for Meaning**

- Analyze how details develop the main idea (Example: causes, reasons)
- Analyze how the organization of a paragraph or passage supports the author's ideas
- Infer the author's purpose when it is or is not stated
- Understand how the use of words, phrases, or figurative language influences the author's intent

Inference

- Make inferences about plots, sequence of events, characters, settings, and ideas

Diagnosis: Determining What Is Missing

Score Report Feedback

- Analyze how details develop the main idea (Example: causes, reasons)
- Analyze how the organization of a paragraph or passage supports the author's ideas
- Understand how the use of words, phrases, or figurative language influences the author's intent

Diagnosis

- Close reading skills
- Ability to engage with text (e.g. noticing, wondering, questioning, relating, thinking, and on occasion, arguing)
- Inference (“reading between the lines”)



Diagnosis

In addition to building close reading skills...Our test-taker needs to work with

- Text structures (description, sequence, problem & solution, compare & contrast, and cause & effect) and signal words
- Evidence—and not just acquiring a broader definition of what evidence is...but ALSO how evidence is used as support for a position or conclusion in text

Addressing Areas for Improvement



The GED Ready[®] RLA Score: 139

Areas for Improvement

- **Identifying and Creating Arguments**

- Understand main ideas and details
- Determine the main idea
- Identify the relationship between the main idea and details
- Identify evidence used to support a claim or conclusion

Text Structures

Evidence

- **Additional Skills**

- Make generalizations or hypotheses based on evidence in a written source
- Determine the author's point of view or purpose
- Analyze how an author uses rhetorical techniques
- Correct errors with frequently confused words

Grammar!

Diagnosis

In addition to building close reading skills...Our test-taker needs to work with

- Text structures (description, sequence, problem & solution, compare & contrast, and cause & effect) and signal words
- Evidence—and not just acquiring a broader definition of what evidence is...but ALSO how evidence is used as support for a position or conclusion in text

What Happens Next? (Prescribe)

How can we optimize performance given the available time?

- Performance Level Descriptors (PLDs for Level 1- Not Passing and Level 2 – High School Equivalency)
- High Impact Indicators (HIIs)
- Remember to have students review the Study Guide from <https://ged.com/>

Getting Started with Content



Relationships Between the High Impact Indicators and Other Indicators

The High Impact Indicators are a list of key skills assessed on the GED® test that, if emphasized in instruction, can help instructors make a significant impact on student skills and performance. This document shows the relationship between the High Impact Indicators and other indicators assessed on the GED® test. Adult educators can use this resource to create instructional plans that address the maximum number of skills in the limited time they have available with students. Providing instruction in a single High Impact Indicator area can help students broaden and deepen their skills, enabling them to apply those skills in multiple ways and in a variety of contexts across all of the content areas of the GED® test.

Note: High Impact Indicators appear in BOLD type.

Reasoning Through Language Arts – High Impact Indicators

High Impact Indicator	Related Indicators from Other Content Areas		
RLA	Social Studies	Science	Math
R.3.1: Order sequence of events in texts. Primarily measured with literary texts.	<p>SSP.3.a. Identify the chronological structure of a historical narrative and sequence steps in a process.</p> <p>SSP.3.b. Analyze in detail how events, processes, and ideas develop and interact in a written document; determine whether earlier events caused later ones or simply preceded them.</p> <p>SSP.3.c. Analyze cause-and-effect relationships and multiple causation, including action by individuals, natural and societal processes, and the influence of ideas.</p> <p>SSP.3.d. Compare differing sets of ideas related to political, historical, economic, geographic, or societal contexts; evaluate the assumptions and implications inherent in differing positions.</p>	<p>SP.3.b. Reason from data or evidence to a conclusion</p> <p>SP.3.c. Make a prediction based upon data or evidence</p>	<p>MP.1.3. recognize solving</p> <p>MP.1.4. reason</p> <p>MP.1.5. identify that is possible</p> <p>MP.1.6. apply a technical a problem</p> <p>MP.2.0. import attribut</p> <p>MP.3.3. of read pathw step</p> <p>MP.3.3. reason</p> <p>MP.3.3. flawed</p>

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High Impact Indicators

All of the indicators listed in the GED® Assessment Target indicators describe the critical thinking skills essential to test-taker success in college, career training, and the workforce. However, those we are highlighting in the **High Impact Indicators** may be useful for educators to emphasize in their instruction.

We selected the following skills as High Impact Indicators because:

- They represent particular **foundational skills** that are the basis for the development of other skills covered in the GED® Assessment Targets and have **broad usefulness** that can be applied in multiple contexts.
- They are a **good fit for classroom instruction** because they are not complicated but are important for students to know and use.
- GED® testing data suggests that **educators may not be currently focusing on these skills** in their GED® test preparation.

While focused classroom instruction on these High Impact Indicators may quickly and positively impact your students' test performance, **educators should note that the High Impact Indicators are not more important than the rest of the indicators.** Proficiency with all of the indicators is essential for test-takers to perform well on the GED® test.

Reasoning Through Language Arts – High Impact Indicators

Revised 2016 GED® Test Performance Level Descriptors: Level 2 (Pass/High School Equivalency: 145-164)

Reasoning Through Language Arts	Mathematical Reasoning	Science	Social Studies
<p>Test-takers who score at the Pass level are typically able to demonstrate satisfactory proficiency with the skills identified in the <u>Below Passing Level</u>, as well as to comprehend and analyze challenging passages similar to "Dante's Comedy 'Inferno,'" John Steinbeck's "Travels With Charity: In Search of America," and Donald MacKay's "The Building of Manhattan." Test-takers who score in this Performance Level are typically able to demonstrate the following skills:</p> <p>Analyzing and creating text features and technique</p> <ul style="list-style-type: none"> • Order sequences of events in texts at a satisfactory level. • Make inferences about postsequence of events, characters/people, settings, or ideas in texts at a satisfactory level. • Analyze relationships within texts, including how events are important in relation to plot or conflict; how people, ideas, or events are connected, developed, or distinguished; how events contribute to theme or relate to key idea; or how a setting or context shapes structure and meaning. • Analyze the roles that details play in complex literary or informational texts at a satisfactory level. • Determine the meaning of words and phrases as they are used in a text, including determining connotative and figurative meanings from context. • Analyze how meaning or tone is affected when one word is replaced with another, at a satisfactory level. • Analyze the impact of specific words, phrases, or figurative language in text, with a focus on an author's intent to convey information or construct an argument. • Analyze how a particular sentence, paragraph, chapter, or section fits into the overall structure of a text and contributes to the development of ideas. • Analyze the structural relationships between adjacent sections of text at a satisfactory level. • Analyze transitional language or signal words and determine how they refine meaning, emphasize certain ideas, or reinforce an author's purpose, at a satisfactory level. • Analyze how the structure of a paragraph, section, or passage shapes meaning, emphasizes key ideas, or supports an author's purpose. • Determine an author's point of view or purpose in texts, at a satisfactory level. • Infer an author's implicit as well as explicit purposes based on details in a text, at a satisfactory level. • Analyze how an author uses rhetorical techniques to advance his or her point of view or achieve a specific purpose. 	<p>Test-takers who score at the Pass level are typically able to demonstrate knowledge of and ability with the skills identified in the <u>Below Passing Level</u> at a satisfactory level as well as the following skills:</p> <p>Quantitative problem solving with rational numbers</p> <ul style="list-style-type: none"> • Order fractions and decimals, including on a number line. • Apply number properties involving multiples and factors at a satisfactory level. • Simplify numerical expressions with rational exponents at a satisfactory level. • Identify absolute value of a rational number as its distance from 0 on the number line and determine the distance between two rational numbers on the number line, at a satisfactory level. • Perform computations with rational numbers. • Compute numerical expressions with squared and square roots of positive, rational numbers at a satisfactory level. • Compute numerical expressions with cubes and cube roots of positive, rational numbers. • Determine when a numerical expression is undefined at a satisfactory level. • Solve real-world problems using rational numbers at a satisfactory level. • Compute unit rates at a satisfactory level. • Use scale factors to determine the magnitude of a size change, and convert between actual drawings and scale drawings. • Solve arithmetic and real-world problems involving ratios and proportions at a satisfactory level. • Solve multi-step arithmetic and real-world problems involving percents. <p>Quantitative problem solving in measurement</p> <ul style="list-style-type: none"> • Compute the area and perimeter of triangles and rectangles at a satisfactory level. • Determine side lengths of triangles and rectangles when given area or perimeter at a satisfactory level. • Compute the area and circumference of circles. • Determine the radius and diameter of circles when given area or circumference. • Compute the area and perimeter of polygons. • Determine side lengths of polygons when given area or perimeter. • Compute the area and perimeter of composite figures. • Use the Pythagorean theorem to determine unknown side lengths in a right triangle at a satisfactory level. • Compute volume and surface area of rectangular prisms. • Determine side lengths and height of rectangular prisms when given volume or surface area. • Compute volume and surface area of cylinders at a satisfactory level. 	<p>Test-takers who score at the Pass level are typically able to demonstrate knowledge of and ability with the skills identified in the <u>Below Passing Level</u> at a satisfactory level as well as the following skills:</p> <p>Analyze scientific and technical arguments, evidence and text-based information</p> <ul style="list-style-type: none"> • Understand and explain textual scientific presentations at a satisfactory level. • Express scientific information or findings verbally at a satisfactory level. • Determine the meaning of symbols, terms and phrases as they are used in scientific presentations at a satisfactory level. • Reconcile multiple findings, conclusions, or theories at a satisfactory level. <p>Applying scientific processes and procedural concepts</p> <ul style="list-style-type: none"> • Make a prediction based on data or evidence at a satisfactory level. • Identify possible sources of error and alter the design of an investigation to minimize that error at a satisfactory level. • Identify and interpret independent and dependent variables in scientific investigations at a satisfactory level. • Understand and apply scientific models, theories and processes at a satisfactory level. • Design a scientific investigation at a satisfactory level. • Evaluate whether a conclusion or theory is supported or challenged by particular data or evidence at a satisfactory level. <p>Reasoning quantitatively and interpreting data in scientific contexts</p> <ul style="list-style-type: none"> • Apply formulas from scientific theories at a satisfactory level. • Determine the probability of events at a satisfactory level. • Use counting and permutations to solve scientific problems at a satisfactory level. 	<p>Test-takers who score at the Pass level are typically able to demonstrate knowledge of and ability with the skills identified in the <u>Below Passing Level</u> at a satisfactory level as well as the following skills:</p> <p>Analyzing and creating text features in a social studies context</p> <ul style="list-style-type: none"> • Identify aspects of a historical document that reveal an author's point of view or purpose at a satisfactory level. • Compare treatments of the same social studies topic in various primary and secondary sources, noting discrepancies between and among the sources at a satisfactory level. <p>Applying social studies concepts to the analysis and construction of arguments</p> <ul style="list-style-type: none"> • Identify the chronological structure of a historical narrative and sequence steps in a process at a satisfactory level. • At a satisfactory level, compare differing sets of ideas related to political, historical, economic, geographic, or societal contexts; evaluate the assumptions and implications inherent in differing positions. • Identify instances of bias or propagandizing at a satisfactory level. • Analyze how a historical context shapes an author's point of view at a satisfactory level.

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It Is All About the Relationships!

R.8.6: Identify an underlying premise or assumption in an argument and evaluate the logical support and evidence provided. Primarily measured with informational texts.

SSP.1 a. Determine the details of what is explicitly stated in primary and secondary sources and make logical inferences or valid claims based on evidence.

AS.1.a: Cite specific textual evidence to support inferences, conclusions, or analyses of technical texts.

Our “Too Close to Call” Test-Taker?

- The RLA test score was 137—consistent with the feedback from the GED Ready[®] RLA exam
- The operational exam feedback identified the following areas as needing improvement
 - Reading for Meaning
 - Identifying and Creating Arguments
 - Making Inferences
- Straight from the GED Ready[®] score report!

What Instructors Need to Know: Social Studies

Same Skills...Different Context



Overview of Social Studies Test



- Content
 - 50% - Civics and Government
 - 20% - United States History
 - 15% - Economics
 - 15% - Geography and the World
- Themes
 - Development of Modern Liberties and Democracy
 - Dynamic Responses in Societal Systems
- Social Studies Practices – analyzing, (critical) thinking, and reasoning
- Technology-enhanced question items

GED Ready® - Social Studies

My Score: 137

TOO CLOSE TO CALL

Test Date: 02/08/2018

How I Can Score Higher

Reading for Meaning in Social Studies

Skills You Can Improve

- Use details to make inferences or claims
- Compare information that differs between sources
- Determine the difference between fact and opinion

Publisher Study Recommendations ⓘ

Select your study material from the dropdown above to get study recommendations

Skill You Can Improve**Publisher Study Recommendations**

- Determine which evidence supports an inference
- Identify bias and propaganda (Example: appealing to a specific group's emotions)
- Analyze cause-and-effect relationships
- Describe the connections between people, places, environments, processes, and events

Using Numbers and Graphs in Social Studies**Skill You Can Improve****Publisher Study Recommendations ⓘ**

- Analyze information from maps, tables, charts, photographs, and political cartoons
- Interpret, use and create graphs with appropriate labeling, and use the data to predict trends (Example: predict relationships or trends from scatterplots or line graphs)
- Expressing text into visual form (Example: charts, graphs, tables etc)

Additional Skills to Work On

Scoring into the Green Zone on the GED Ready® practice test shows that you are likely to pass the GED® test. In order to progress into the Green Zone, consider the following:

Strengthen the skills listed in the Red and Yellow Zones and apply them at a basic level of proficiency, with a particular focus on improving the following Yellow Zone skills:

- Determine the clearly stated details in primary and secondary sources, and use this information to make logical inferences or valid claims

- Determine the central ideas or information of a primary or secondary source document
- Determine the meaning of words and phrases used in a social studies context
- Determine the difference between fact and opinion in a primary or secondary source document
- Pull specific evidence from a document or other source to support inferences or analyses of given processes, events, or concepts
- Describe people, places, environments, processes, and events, and the connections between and among them
- Analyze cause-and-effect relationships, including those with multiple factors
- Analyze numerical and technical materials (for example, charts, research data) and written materials on a common topic
- Analyze information presented visually, for example, in maps, tables, charts, photographs, political cartoons, etc.
- Put numerical information found in a written source into tables, graphs and charts, and express numerical information in words
- Interpret, use and create graphs with appropriate labeling, and use the data to predict trends
- Show how dependent and independent variables are represented on a graph. Analyze and communicate how the variables are related to each other
- Recognize the difference between when one event or action causes another and when two or more events or actions are correlated with each other
- Calculate the mean, median, mode, and range of a set of data

Develop the following additional skills:

- Determine how authors reveal their points of view or purposes in historical documents
- Compare two sources on the same social studies topic, paying special attention to the differences between them
- Put historical events in chronological order and understand the order of steps in social studies processes (for example, how a bill becomes a law)
- Compare different sets of social studies-related ideas and make judgments about how those ideas create meaning in different arguments
- Identify bias and propaganda
- Analyze how historical circumstances shape an author's point of view

Please note that your projected score for Social Studies of the GED® test is valid for 60 days from the date you took Social Studies of GED Ready®. In addition, it assumes you took Social Studies of GED Ready® in one sitting, under timed conditions, with no breaks. The projected score is only an indication of your preparedness for the actual GED® test and does not guarantee that you will actually obtain the projected score on the GED® test. See My Scores, "Review My Written Answers" page for detailed descriptions of typical written answers to Extended Response items that would meet the passing standard. Although the study recommendations listed on the "How I Can Score Higher" page may aid you in preparing for the GED® test, following these recommendations alone does not guarantee a positive result on the actual GED® test.

GED Ready[®] Social Studies Score: 137

Areas for Improvement

- Reading for Meaning in Social Studies

- Use details to make inferences or claims
- Compare information that differs between sources
- Determine the difference between fact and opinion

Inference

Comparison

- Analyzing Historical Events and Arguments in Social Studies

- Determine which evidence supports an inference
- Identify bias and propaganda
- Analyze cause and effect relationships
- Describe the connections between people, places, environments, processes, and events

Cause & Effect

GED Ready[®] Social Studies Score: 137

Areas for Improvement

Yes—math has
a role in Social
Studies!

- Using Numbers and Graphs in Social Studies
 - Analyze information from maps, tables, charts, photographs, and political cartoons
 - Interpret, use and create graphs with appropriate labeling, and use the data to predict trends (Example: predict relationships or trends from scatterplots or line graphs)
 - Expressing text into visual form (Example: charts, graphs, tables, etc.)

Skills to Work On

- Determine the clearly stated details in primary and secondary sources, and use this information to make **logical inferences** or valid claims
- Determine the **central ideas** or information of a primary or secondary source document
- Determine the meaning of words and phrases used in a social studies context
- Determine the **difference between fact and opinion** in a primary or secondary source document
- Pull **specific evidence** from a document or other source to support inferences or analyses of given processes, events, or concepts
- Describe people, places, environments, processes, and events, and the **connections** between and among them
- Analyze **cause-and-effect relationships**, including those with multiple factors
- Recognize the difference between when one event or action causes another and when two or more events or actions are correlated with each other

Additional Skills

- Analyze numerical and technical materials (for example, **charts, research data**) and written materials on a common topic
- Analyze **information presented visually**, for example, in maps, tables, charts, photographs, political cartoons, etc.
- Put numerical information found in a written source into tables, graphs and charts, and express numerical information in words
- **Interpret, use and create graphs** with appropriate labeling, and use the data to predict trends
- Show how dependent and independent variables are represented on a graph. **Analyze and communicate** how the variables are related to each other
- **Calculate** the mean, median, mode, and range of a set of data

Diagnosis: Skills Needed

- Close reading—the ability to sort through the structure of text to extract important details, evidence, and facts
- Engagement with Social Studies texts (noticing, wondering, questioning, relating, thinking, and on occasion, arguing)
- Inference skills (i.e. “reading between the lines”)
- Mathematical reasoning in the Social Studies context

Inference is Process-Driven

The alchemy of inference:

- Using active reading skills (beyond the basics)
- Engaging with the text and/or information presented
 - Questioning
 - Thinking critically
 - Making connections

Students need to be reminded that an inference is not a wild guess!

Teach Inference from Simple to Complex



Inference = Finding the **Clues**

From Simple to		Complex			
Pictures/ Advertisements	Comics	Sentences	Short paragraphs	Longer, more intricate passages – fiction/ mysteries	Longer, more intricate passages – nonfiction

A Quick Example: Teaching with Comics

Sample Questions

1. What do you see?
2. What do you know about excuses on not having your homework done?
3. What does the student mean when he says, "I ate my homework."?



How Did Our Test-Taker Fare with Operational Testing?

- GED® Social Studies test score: 134
- The operational exam feedback identified the following areas as needing improvement
 - Reading for Meaning in Social Studies
 - Analyzing Historical Events and Arguments in Social Studies
 - Using Numbers and Graphs in Social Studies
- Sound familiar? It should...

What Instructors Need to Know:

Mathematical Reasoning



A GED Ready™ Score Report: Yellow Zone

7/6/2018

MyGED® : Score Report

GED Ready® - Mathematical Reasoning

My Score: 136

TOO CLOSE TO CALL

Test Date: 01/25/2018

How I Can Score Higher

Basic Math

Skill You Can Improve

- Find the distance between numbers on a number line using absolute value

- Compute and solve problems with whole numbers, fractions, and decimals

Publisher Study Recommendations ⓘ

Select your study material from the dropdown above to get study recommendations

Geometry

Skill You Can Improve

Publisher Study Recommendations ⓘ

Skill You Can Improve**Publisher Study Recommendations**

- Construct, and explain data from bar graphs, circle graphs, dot plots, histograms, box plots, tables, scatter plots, and line graphs
- Find the volume and surface area of three-dimensional shapes (Examples: rectangular and right prisms, cylinders, right pyramids). Find the side lengths, radius, or diameter of a three-dimensional figure when given the volume or surface area
- Find the probability of one or more events happening
- Find the side lengths of triangles, rectangles, and polygons when given the area or perimeter

Basic Algebra**Skill You Can Improve****Publisher Study Recommendations ?**

- Solve inequalities and real-world problems that involve them, and graph the solutions
- Add, subtract, multiply, divide, and factor polynomials [Example: $(x + 8)(x + 4)$; factor $3x^2 + 10x - 8$]
- Create algebraic expressions to represent problem situations or word-to-symbol translations (Example: write an inequality to match a word problem)

Graphs and Functions**Skill You Can Improve****Publisher Study Recommendations ?**

The GED Ready Math Score: 136

Areas for Improvement (a sample)

- Basic Math (e.g. Number lines and problem solving with whole numbers, fractions, and decimals)
- Geometry (e.g. construct and interpret data from various types of graphs; volume and surface area of three dimensional figures; find side lengths, radius or diameter when given the volume or surface area; basic probability; finding side lengths when given area or perimeter)
- Basic Algebra (e.g. multiplying polynomials; solve inequalities; and create basic algebraic expressions to solve problems)
- Graphs and functions

Problem solving

Geometric reasoning

What About the Additional Skills?

- These represent skills that the test-taker did NOT consistently demonstrate:
 - Solve problems involving rational numbers
 - Compute unit rates
 - Solve two-step, arithmetic, real world problems that involve percents
 - Compute the area and perimeter of triangles and rectangles
 - Find side lengths of triangles and rectangles, when given area or perimeter
 - Calculate the mean, median, mode, range, and weighted average, and calculate a missing data value, given the average and all the missing data values but one

Diagnosis

- A student whose mathematical reasoning skills stalled after learning only some of the basics
- Use the Performance Level Descriptors (PLDs) to determine where the student is on the math continuum—add more complex topics when you are certain that the foundation is in place
 - For example, students who are confused by a number line are likely to be unable to plot points on a coordinate plane.
- As you determine how to sequence math content, keep in mind what foundational skills are necessary.

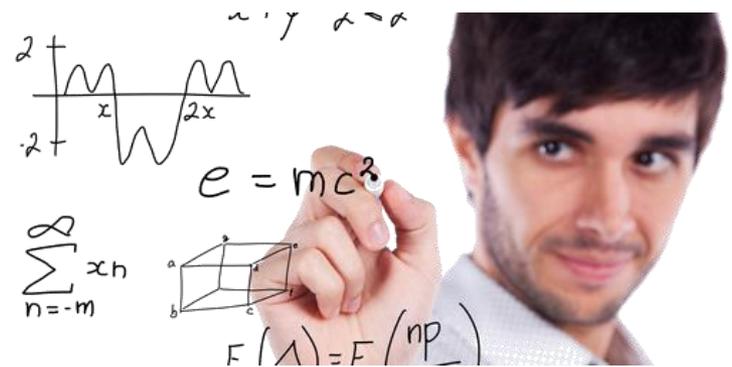
What Is Mathematical Reasoning?

Mathematical reasoning is the critical skill that enables a student to make use of all other **mathematical** skills. With the development of **mathematical reasoning**, students recognize that mathematics makes sense and can be understood.

Analysis of Math Challenges

In Mathematical Reasoning, items require:

- Application and development of quantitative and algebraic reasoning skills
 - Grounded in real-world examples
 - Beyond rote application of formulas and/or procedural steps
 - The “why” and “how” of math
- Strong critical reading and thinking skills
 - What is the question asking?
 - What heuristics can I use?
 - Is the answer reasonable?



A Couple of Simple Strategies

- Teach a simple approach to solving word problems by using real world examples
- Teach multiple ways to solve problems
- Focus on the *WHY* to have students become comfortable using reasoning skills

Getting Started: Word Problems



Reading and Reasoning Process

First Read: Read for Understanding

Second Read: Identify a Problem-Solving Process

Third Read: Solve the Problem and Check for Reasonableness

Miller, P. and Koesling, D. "Mathematics Teaching for Understanding: Reasoning, Reading, and Formative Assessment. Danvers, MA

Why Word Problems?

- Require higher order thinking skills—even in their simplest forms
- Require close reading in a mathematical context
- Provide a way to develop skills in determining data sufficiency
- Exercise mathematical reasoning skills

In the Classroom, Emphasize...

- **READING** the problem
- **UNDERSTANDING** the question they are being asked to solve
- **ORGANIZING** the data and determine what is missing
- **WORKING with preliminary ideas** about which math tools they will need for the solution

Close Reading for WPs (1st Read)

- Have students read through a problem once—just to get a sense of what’s being asked
- What’s the problem to be solved?
- For your visual learners, is there a picture that can help them visualize the problem?

Organize the Information

- What is known?
- What does the problem ask to be solved?
- What are the important verbal cues?
 - In the sugar cane example, how is the output of each factory described? (Hint)
 - Is there a pattern? (Hint)

Close Reading for WPs (2nd Read)

- Now, ask students to translate the words into mathematics
- Is all the information supplied in the word problem needed for the solution?

Finding the cues in text

Words/Terms	Operations
Sum, plus, in addition to, total, and	Addition
Difference, minus, less than, fewer, left remaining	Subtraction
Product, times, each	Multiplication
Quotient, divided by, equal groups/parts/shares	Division

Close Reading for WPs (3rd Read)

- Students read a third time to ensure that they are answering the right question
- For example, is the answer to the question the number of items or the dollars spent?
- In the case of our example, it is the output of the first factory (not any of the others)

Using Graphic Organizers for Word Problems

Graphic organizers allow students to:

- sort information as essential or non-essential
- structure information and concepts
- identify relationships between concepts
- organize communication about an issue or problem
- utilize experiences as a starting point of the problem-solving process

Zollman, 2011; 2009a; 2009b

A Plus for Using Graphic Organizers

Instructors can use graphic organizers as inputs to...

- Diagnose skills demonstrated and skills needed
- Implement learning strategies in the classroom

Meeting The Challenge

- Increase instruction on problem-solving strategies
- Increase emphasis on geometric and algebraic thinking
- Provide instruction in higher-order mathematics
- Shift focus from “rules or processes” of mathematics to deeper understanding of “why”
- Incorporate close-reading strategies into the math classroom
- Have high expectations of all students

And Our “Too Close to Call” Test-Taker?

- The Math test score was 135—completely in line with the feedback from the GED Ready exam
- The operational exam feedback identified overlapped with the areas needing improvement on the GED Ready—Basic Math, Geometry, Basic Algebra, Graphs & Functions...
- Sound familiar?

What Instructors Need to Know: Science

Same Skills...Different Context



Overview of Science Test



- Content
 - Life Science – 40%
 - Physical Science – 40%
 - Earth and Space Science – 20%
- Themes
 - Human Health and Living Systems
 - Energy and Related Systems
- Science Practices – reasoning and thinking scientifically
- Question types – Technology-enhanced items

GED Ready® - Science

My Score: 141
TOO CLOSE TO CALL
Test Date: 04/12/2018

How I Can Score Higher

Reading for Meaning in Science
Skill You Can Improve

- Understand symbols, terms, and phrases in science
- Understand and explain information from science readings

Publisher Study Recommendations ⓘ

Select your study material from the dropdown above to get study recommendations

Designing and Interpreting Science Experiments
Skill You Can Improve

- Understand and apply science theories and processes

Publisher Study Recommendations ⓘ

Skill You Can Improve

- Decide whether conclusions are supported by data
- Make predictions based on data
- Identify and improve hypotheses for scientific investigations

Publisher Study Recommendations**Using Numbers and Graphics in Science****Skill You Can Improve**

- Use numbers or symbols to display science information (Examples: use chemical symbols for elements or provide a numeric answer from interpreting a graph or chart)
- Apply science formulas (Example: $s = d/t$)
- Explain different ways in which scientific information is presented (Examples: tables, charts, diagrams)

Publisher Study Recommendations ?

Additional Skills (Selected)

- Identify and refine hypotheses for **scientific investigations**
- Pull specific **evidence** from a written source to support a finding or conclusion
- **Make a prediction** based on data or evidence
- **Make judgments** about whether theories or conclusions are supported or challenged by data or evidence
- **Express scientific information** or findings using numbers or symbols
- Understand and explain **written scientific presentations**

GED Ready Science Score: 141

Areas for Improvement

- Reading for Meaning in Science
- Designing and Interpreting Science Experiments
- Using Numbers and Graphics in Science

Close
Reading

Scientific
Method

Math in
Science

Diagnosis

Required: Extracting important details, evidence, and facts

- Develop close reading skills (an essential)
- Practice engaging with Science texts (noticing, wondering, questioning, relating, thinking, and on occasion, arguing)
- Practice “reading between the lines” (aka inference)

How Did Our Test-Taker Fare with Operational Testing?

- GED[®] Science test score: 143
- The operational exam feedback identified the following areas as needing improvement
 - Reading for Meaning in Science
 - Designing and Interpreting Science Experiments
 - Using Numbers and Graphics in Science

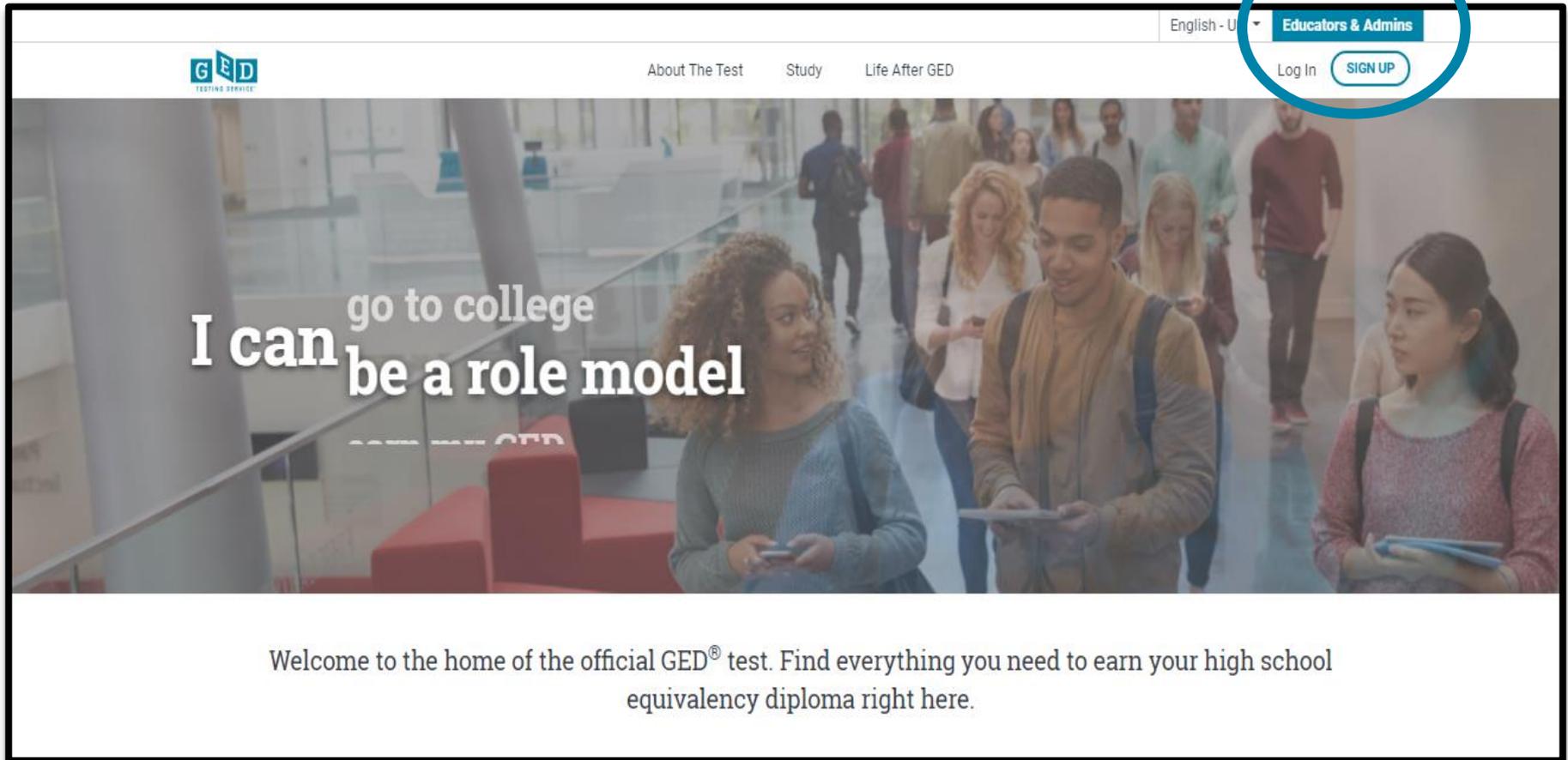
Sound familiar? It should...It's the same feedback from the GED Ready[®]!

A Few Takeaways...

A Few Takeaways

- Expand the horizons in your classroom—really promote the idea that there are many effective ways to do things—whether it is writing, problem-solving, or thinking analytically or scientifically.
- Be willing to “repeat teach”—once is not enough when students are learning a concept
- Flow with the plateaus—no matter what we wish would happen, learning and skill development are not linear.
- Remembering that ***learning*** is iterative and integrative will enable you to expect the best and have your students achieve their best.

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English - U

Educators & Admins

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About The Test Study Life After GED

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Questions? Concerns?



Thank you!

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